Claims 1-22 have been rewritten as claims 23-43 to define the invention more specifically. The claims now all contain features that perform voice recognition using

5   grammar extraction on at least one utterance after narrowing down the list of potential users from a larger number to a smaller number using a different form of voice recognition. The different form of voice recognition can include grammar extraction on a different portion of the at

10   least one utterance from the ultimate grammar extraction, or can include voice recognition not involving grammar extraction. This allows a higher recognition accuracy than would be possible from a single grammar extraction alone, while still employing grammar extraction as part of the

15   recognition process to allow the use of "nonsense words": including words not found in a conventional dictionary.

Schier does not narrow a list of potential users down using voice recognition, and then perform grammar extraction to recognize the user. Schier performs a single

20   voiceprint extraction to identify the user.

Webb ("Speaker identification experiments using HMMs") also does not narrow a list of users down using voice recogniton. Webb narrowed a list of users down by manual

selection (page II-388, column 2, lines 3-15), not using recognition techniques.

Because neither Schier nor Webb discloses narrowing down a set of users using recognition and then using the narrowed down set of users to perform speech recognition using grammar extraction, claims 23-43 are patentably distinguishable over Schier and Webb, either alone or in combination.

Cancel claims 1-22 and add claims 23-43 as follows:

23. (new) A method of obtaining a user's identity by voice, comprising:

receiving a set of at least one known grammar and a set of at least one known voiceprint corresponding to a
5 plurality of utterances from each of a first plurality of users;

for each of the first plurality of users, associating the set of at least one known grammar and the set of at least one known voiceprint with an identifier of said user;

10 receiving at least one utterance from a subject user;

performing a voice recognition on at least one of the at least one utterance received from the subject user, said voice recognition being different from extracting a grammar from a first at least one of the at least one utterance
15 received from the subject user;

responsive to the voice recognition technique, selecting from the first plurality of users a second plurality of users, smaller than the first plurality of users by a factor of at least ten, for which the first

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20   voice recognition most closely matches at least one

selected from the set of at least one grammar and the set

of at least one voiceprint associated with the identifiers

of the second plurality of users;

from the second plurality of users, selecting the user

25   for which a grammar of the first at least one of the at

least one utterance received from the subject user most

closely matches at least one of the set of at least one

grammar associated with the identifiers of the second

plurality of users;

30   verifying a voiceprint of at least one of the at least

one utterance has at least a similarity to the set of at

least one voiceprint of the selected user; and

responsive to the verifying step, providing the

identifier of the selected user as the identifier of the

35   subject user.

24. (new) The method of claim 23 wherein the voice

recognition comprises extracting a grammar from a second at

least one of the at least one utterance received from the

subject user, the second at least one of the at least one

5   utterance having at least one difference from the first at

least one of the at least one utterance.

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25. (new) The method of claim 23 wherein the voice recognition technique comprises speaker independent voice recognition.

26. (new) The method of claim 23 wherein the first at least one of the at least one utterance comprises a password.

27. (new) The method of claim 23 wherein a number of the second plurality of users corresponds to a constant.

28. (new) The method of claim 23 wherein the second plurality of users corresponds to users for which the voice recognition technique yields a confidence level exceeding a threshold.

29. (new) The method of claim 23 wherein at least one of the at least one utterance may be other than a real word.

30. (new) A system for obtaining a user's identity by voice, comprising:

storage for storing and providing at an output a set of at least one known grammar and a set of at least one known voiceprint corresponding to a plurality of utterances from each of a first plurality of users, for each of the first plurality of users, the set of at least one known

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grammar and the set of at least one known voiceprint being

associated with an identifier of said user;

10 a first recognizer having an input operatively coupled

for receiving at least one utterance from a subject user,

the first recognizer for performing a voice recognition on

at least one of the at least one utterance received from

the subject user, said voice recognition being different

15 from extracting a grammar from a first at least one of the

at least one utterance received from the subject user, the

first recognizer additionally for, responsive to the voice

recognition technique, selecting from the first plurality

of users a second plurality of users, smaller than the

20 first plurality of users by a factor of at least ten, for

which the first voice recognition most closely matches at

least one selected from the set of at least one grammar and

the set of at least one voiceprint associated with the

identifiers of the second plurality of users received at a

25 second input coupled to the storage output, and for

providing at an output identifiers of the second plurality

of users;

  a second recognizer having a first input for receiving

the identifiers of the second plurality of users, and a

30 second input for receiving at least one of the at least one

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utterance from the subject user, the second recognizer for

extracting a grammar from the at least one of the at least

one utterance received at the second second voice

recognizer input, and for selecting from the second

35   plurality of users the user for which the grammar extracted

most closely matches at least one of the set of at least

one grammar associated with the identifiers of the second

plurality of users received at a third input coupled to the

storage output, and for providing an identifier of the

40   selected user at an output;

a verifier having a first input coupled to the second

recognizer output, the verifier for obtaining a voiceprint

of at least one of the at least one utterance received at a

second input, and for verifying a voiceprint of at least

45   one of the at least one utterance has at least a similarity

to the set of at least one voiceprint of the selected user

received at a third input coupled to the storage output;

and responsive to said verification, providing at an output

the identifier of the selected user as the identifier of

50   the subject user.

31. (new) The system of claim 30 wherein the first

recognizer performs the voice recognition by extracting a

grammar from a second at least one of the at least one

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utterance received from the subject user, the second at

5   least one of the at least one utterance having at least one

difference from the first at least one of the at least one

utterance.

32. (new) The system of claim 30 wherein the first

recognizer performs the voice recognition using speaker

independent voice recognition.

33. (new) The system of claim 30 wherein the first at

least one of the at least one utterance comprises a

password.

34. (new) The system of claim 30 wherein a number of

the second plurality of users corresponds to a constant.

35. (new) The system of claim 30 wherein the second

plurality of users corresponds to users for which the voice

recognition performed by the first recognizer yields a

confidence level exceeding a threshold.

36. (new) The system of claim 30 wherein at least one

of the at least one utterance may be other than a real

word.

37.   (new) A computer program product comprising a

computer useable medium having computer readable program

code embodied therein for obtaining a user's identity by

voice, the computer program product comprising computer

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5   readable program code devices configured to cause a

computer to:

receive a set of at least one known grammar and a set

of at least one known voiceprint corresponding to a

plurality of utterances from each of a first plurality of

10 users;

for each of the first plurality of users, associate

the set of at least one known grammar and the set of at

least one known voiceprint with an identifier of said user;

receive at least one utterance from a subject user;

15   perform a voice recognition on at least one of the at

least one utterance received from the subject user, said

voice recognition being different from extracting a grammar

from a first at least one of the at least one utterance

received from the subject user;

20   responsive to the voice recognition technique, select

from the first plurality of users a second plurality of

users, smaller than the first plurality of users by a

factor of at least ten, for which the first voice

recognition most closely matches at least one selected from

25 the set of at least one grammar and the set of at least one

voiceprint associated with the identifiers of the second

plurality of users;

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from the second plurality of users, select the user

for which a grammar of the first at least one of the at

30 least one utterance received from the subject user most

closely matches at least one of the set of at least one

grammar associated with the identifiers of the second

plurality of users;

verify a voiceprint of at least one of the at least

35 one utterance has at least a similarity to the set of at

least one voiceprint of the selected user; and

responsive to the computer readable program code

devices configured to cause the computer to verify, provide

the identifier of the selected user as the identifier of

40 the subject user.

38. (new) The computer program product of claim 37

wherein the computer readable program code devices

configured to cause the computer to perform voice

recognition comprise computer readable program code devices

5 configured to cause the computer to extract a grammar from

a second at least one of the at least one utterance

received from the subject user, the second at least one of

the at least one utterance having at least one difference

from the first at least one of the at least one utterance.

39. (new) The computer program product of claim 37 wherein the computer readable program code devices configured to cause the computer to perform voice recognition comprise computer readable program code devices configured to cause the computer to perform speaker independent voice recognition.

40. (new) The computer program product of claim 37 wherein the first at least one of the at least one utterance comprises a password.

41. (new) The computer program product of claim 37 wherein a number of the second plurality of users corresponds to a constant.

42. (new) The computer program product of claim 37 wherein the second plurality of users corresponds to users for which the voice recognition technique yields a confidence level exceeding a threshold.

43. (new) The computer program product of claim 37 wherein at least one of the at least one utterance may be other than a real word.

Thus, claims 23-43 are patentably distinguishable over the cited references. Favorable action is solicited.

Respectfully submitted,
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